

How to use the



POLAROID PHOTOELECTRIC SHUTTER MODEL 440

The Polaroid Photoelectric Shutter Model 440 is a fully automatic shutter which is attached to the Polaroid Land Camera. It is designed to be used with Polaroid Land 3000 speed film. The light that falls on the photocell of the 440 Shutter automatically sets the speed of the shutter blade at the exact instant the picture is snapped. The shutter speed will vary from 1/10th of a second to 1/1000th of a second, depending on the amount of light needed for perfect exposure. In addition to selecting exposure automatically, the shutter also insures a picture of exceptional sharpness. Because it "stops down" the lens to a very small aperture, the depth-of-field of the picture is so great that for most pictures focusing is unnecessary.

Your success with the shutter will be greatly enhanced if you will spend a moment reading this brief booklet, and practicing with the shutter before mounting it to the camera.

NOTE: Your camera must be light-tight for successful use of the 440 Shutter and 3000 speed film. If your camera serial number is not prefaced with an "L", the light seals furnished with the shutter should be fitted on the camera, following the instructions enclosed with them.

HOW TO ATTACH THE SHUTTER

Set the shutter of your camera to EV 14 (or No. 5 on cameras using the original numbering system), and set the I-B knob to "B". The



440 Shutter will actually swing the knob to "B" automatically in most cameras, but it is wise to pre-set the knob to "B" in case the fit between the shutter and camera is not perfect.

Once the camera has been set at EV 14, it is most important not to change the setting while the shutter is attached. If you move the setting wheel, the camera shutter may stay open when the 440 Shutter is removed, fogging the next picture. If this should happen, turn the dial back to EV 10 (No. 1) to release the shutter blade.

Thread the trip-lever beneath the support arm of your camera shutter, hold the unit flat and firmly against the front of the camera and move the latch lever over to the latch position.

As the latching lever is swung to the latch position, you will notice that the regular trip-lever for the camera shutter is depressed. *At the end of the latching motion, the camera shutter should click, just as it would if you had taken a picture.* Be sure that this click takes place, because the camera shutter must be open behind the 440 Shutter. If you don't hear a click, just press the trip-lever the rest of the way.

Incidentally, if you should ever make a completely black picture without even a faint sign of an image, it will be because the camera shutter did not click, or because the I-B knob didn't swing over to "B". Double-check these points each time you mount the 440 Shutter.

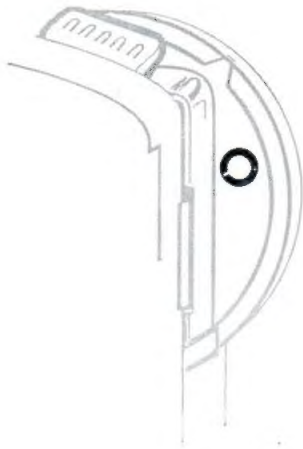
INSUFFICIENT-LIGHT INDICATOR

You will note on the back of the shutter a small window, through which a white flag can be viewed when the light is dim. When this warning indicator is centered in the window there is not sufficient light to make a picture automatically with the shutter. Check this window before clicking the shutter. In general, you will find that the shutter will work automatically almost anywhere outdoors, until about two hours before sunset. In very deep shade, or on extremely dark days, it's wise to watch the insufficient-light indicator. Even though there may not be enough light to operate the photoelectric shutter, there will be plenty of light to continue to take pictures with 3000 speed film in the camera. If the indicator shows that the 440 Shutter will not operate, just remove the shutter and take pictures manually.

HOW TO TAKE PICTURES OUTDOORS

With the 440 Shutter attached, you are ready to take outdoor pictures automatically, with never a worry about setting the camera for correct exposure. But first you should understand what effect the 440 Shutter has on the focus of your camera.

The 440 Shutter reduces the lens aperture to $f/54$, which enormously increases the depth-of-field of the camera. This means that with the



A FURTHER NOTE

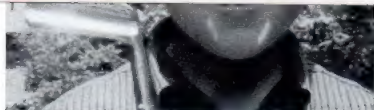
. . . on using the insufficient-light indicator (page 4): it may sometimes be difficult to judge whether the white flag is completely centered in the window, because of the viewing angle or a slight offset of flag or window.

If you are not sure whether there is enough light for automatic operation, just cover the cell window on the front of the Photoelectric Shutter with your hand and watch the flag to see if it moves. If the flag moves at all as you cover and uncover the cell, there is enough light and the meter is controlling exposure. If it does not move, there is not enough light. Remove the shutter, set the camera to EV 14 or lower and take pictures with manual exposure settings.

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rything will actually feet to infinity. If the viewfinder (Model the camera at 6 feet you will never have as close as 3½ feet. Model 150 or Model 800, you will still want lot for focusing, but lists for near and far knob. For greatest will find it best to wever, if you would cy in the viewfinder is, set the camera to get about focusing.

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camera focused at 6 feet everything will actually be in sharp focus from $3\frac{1}{2}$ feet to infinity. If your camera has a wire-frame viewfinder (Model 95A, 95B, 100 or 700) focus the camera at 6 feet and leave it there, because you will never have to change even for pictures as close as $3\frac{1}{2}$ feet.

If your camera is a Model 150 or Model 800, with a coupled rangefinder, you will still want to use the focusing knob, not for focusing, but because the viewfinder adjusts for near and far viewing as you turn the knob. For greatest viewfinding accuracy, you will find it best to use the focusing knob. However, if you would rather sacrifice some accuracy in the viewfinder in order not to have to focus, set the camera to the 6-foot distance and forget about focusing.

EXTREME CLOSE-UPS

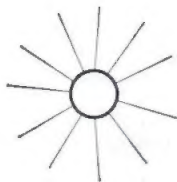
The depth-of-field of the 440 Shutter will let you take pictures as close as 24 inches if you focus the camera to the furthest forward position — $3\frac{1}{2}$ feet. At that setting everything will be sharp between about 2 feet and about 10 feet. Portraits made at this distance are quite striking, and you will find this feature of your 440 Shutter particularly enjoyable. In making such pictures, remember that the viewfinder is not intended for aiming as close as 2 feet. Allow plenty of room between your subject and the top and right-hand sides of the viewfinder frame.



For all normal outdoor pictures, just aim the camera and take the picture. The first few times you use the shutter you may not be completely sure that the shutter has tripped, because it has a very gentle action, and makes scarcely any noise. Here again, a little practice with the shutter before attaching it to the camera will help you get the feel of the shutter as it trips. Try to squeeze the shutter-release slowly and smoothly. Do not punch it, or you may cause a blur in your picture. Although a great many of your pictures outdoors will be made at fast shutter speeds, there will be some that will be made at rather slowshutter speeds, and it is important not to jar the camera at the instant picture is snapped.



DON'T



Only one major precaution is recommended for outdoor pictures: do not take pictures with the camera (and the photoelectric cell) facing into the sun. If the cell "sees" the sun, or even an excessive amount of bright sky, it will "think" the subject is lighter than it really is, and the resulting picture will be too dark. Also, pictures made directly into the sun tend to show lens flare, an over-all grayness in the picture which gives it a washed-out look. (Once in a while this same flare can result from aiming the camera at the bright chromium on a car if the car is within 6 or 8 feet of the camera.)

The safest position is one in which the sun comes over the picture-taker's shoulder. If this causes your subject to squint, try a side-lighted picture, with the sun at right angles to the aiming direction. Some of the best pictures of all are made in open shade or partial shade, where the 440 Shutter is especially valuable because of its ability to select the best exposure in tricky lighting situations.

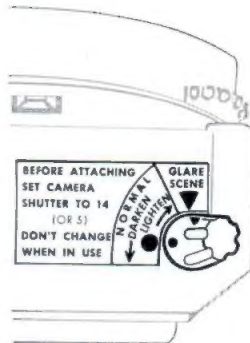
ADJUSTMENT KNOB

On the top of the 440 Shutter there is an adjustment knob, pictured here. It should be used only when a situation calls for it — and then with some care.

This knob serves two purposes — it changes the sensitivity of the photocell to adjust it for extremely bright scenes, and it changes the average lightness or darkness of pictures made in your particular camera, to suit your preference.

Note that at the extreme clockwise position of the knob a red triangular pointer on the knob will match a mark which says “Glare Scene”. This refers to scenes in which the lighting is so strong that it is actually uncomfortable to your eyes — snow scenes, brilliant beach scenes or bright sunlight on water, for instance. For such pictures, set the knob to its extreme clockwise position, matching the red triangle on the knob to the mark on the instruction plate.

There is another indicator on the knob, a red dot, the position of which can be varied over the range of “Lighten — Darken” indicated on the printed plate surrounding the knob. With this adjustment you can make your pictures come out slightly lighter or slightly darker in order to suit your preference. It is suggested, however, that you not vary this setting from picture to picture, because you will have difficulty getting uniform pictures. You will almost



“Lighten”

“Darken”





1



2



3

always find that a mid-range setting of the knob will be right. If you notice most of your pictures coming out a little lighter than you wish to have them, set the knob toward "Darken"; vice versa for lighter pictures. The approximate range of control obtained with this setting is shown in the pictures at the left.

CLOSE-UP READING TECHNIQUE

The 440 Shutter has an additional feature which, with careful use, will let you take pictures in situations which would ordinarily confuse the photocell, such as a back-lighted picture, for instance, or one with a predominant sky area in it. As noted earlier, if the photocell in the shutter "sees" direct sunlight or an undue amount of sky, it will "think" that the scene is lighter than it actually is, and the resulting picture will be too dark. In general, it is perhaps best to avoid this kind of picture-taking situation, but if you wish to take the extra care to apply the following technique, you will be able to extend the usefulness of your shutter. There are three situations where this technique is useful:

1. Pictures with back-lighting (face in shadow, sunlight behind the subject).
2. Low angle pictures with the sky as the predominant background.
3. A brightly lighted subject against a very dark background.

To handle these situations, your shutter has a "meter-locking point", reached when the shutter trip-lever is depressed about $\frac{4}{5}$ ths of the way. With the shutter off the camera, practice moving the trip-lever slowly until you feel it click. This will be at the point where the top edge of the metal trip-lever is opposite a small raised line at the corner of the shutter housing. When the shutter lever has reached this position, it will not return until it is pressed the rest of the way to take the picture. At this point the meter is locked and the exposure which results will then be determined by the amount of light that the meter registered when it was locked.

To utilize this feature, make an extreme close-up reading on the side of your subject's face closest to the camera. You must be as close to the face as you can possibly get *without casting a shadow* — not more than two or three inches away. No portion of the cell opening must be exposed to the background or to the sunlight beyond the subject, otherwise you will obtain a false reading. Hold the camera up to the subject, 2 to 3 inches away, and carefully depress the trip-lever to the locking point. Then step back and take the picture by pressing the trip-lever the rest of the way — about $\frac{1}{8}$ th inch.

Before you attempt to use this technique, practice with the shutter to develop a "feel" for the locking point. Otherwise you may inadvertently snap a picture while you are trying to make a close-up reading.





SHUTTER SPEED RANGE

The maximum speed of the shutter is about $1/1000$ th of a second, and this is the speed at which the shutter will operate in brilliant sunshine in bright surroundings. Under these conditions, you will find that you can stop motion very effectively, because at $1/1000$ th of a second there is hardly any action of a human subject that can't be frozen. With less brightly lighted scenes, the shutter operates at a slower speed.

YELLOW FILTER FOR CLOUD EFFECTS

There is a yellow filter, available as an accessory for your shutter, which covers both the lens and cell openings. With this filter, you can darken the sky in a picture somewhat and thus heighten the beauty of clouds. Complete instructions for use of the filter accompany it.

TAKE CARE OF YOUR SHUTTER

Your shutter is as ruggedly built as any high-quality photoelectric exposure meter and can be expected to last fully as well. Because the meter movement is of necessity rather delicate, avoid any severe shocks to the instrument. Do not let sand or dirt get into the mechanism. Keep fingerprints away from the glass surfaces in front and back — they are covered with a low-reflection coating, and should be cleaned only with lens tissue or a soft handkerchief. It is also very important to be sure the camera lens is perfectly clean. Keep the shutter in the pouch when not in use.

The Polaroid Photoelectric Shutter Model 440 is guaranteed against defects in materials or workmanship for a full year following the date of original purchase. During this period, any such defects will be remedied without charge (except for transportation) when the shutter is returned through your dealer, or shipped to any of these Polaroid Corporation Repair Stations.

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